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Safety, Performance and Interoperability Requirements Document for Traffic Situation Awareness with Alerts (TSAA)

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Prepared by: SC-186
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1 INTRODUCTION

This document provides the minimum operational, Safety and Performance Requirements (SPR) and Interoperability Requirements (INTEROP) for the implementation of Traffic Situation Awareness with Alerts (TSAA). The TSAA application is fully defined in the Operational Services and Environment Definition (OSED) found in Annex A.

All material in this document was developed jointly by European Organisation for Civil Aviation Equipment (EUROCAE) Working Group 51 and RTCA Special Committee 186. This document was developed based on the criteria for SPR and INTEROP documents set forth in RTCA DO-264/EUROCAE ED-78A, "Guidelines for Approval of the Provision and Use of Air Traffic Services Supported by Data Communications" [14] and the "Streamlined ADS-B Standardization Process – Joint SC186/WG51 Proposal" [35]. This document provides the minimum TSAA requirements, and allocations thereof, based on the results of a coordinated requirements determination process.

The requirements contained in this document are necessary to provide adequate assurance that the appropriate elements of the relevant Communication Navigation Surveillance and Air Traffic Management (CNS/ATM) system, when operating together, will perform their intended function in an acceptably safe manner for the operations defined in the OSED.

While all detailed SPR-related assessments are found in the Annexes to this document, Chapter 3 presents the results of reconciling all of these assessment results into a single set of underlying Safety and Performance Requirements. This process retains the most stringent requirements for those attributes or parameters commonly applied by both the safety and performance assessments. Traceability of those requirements to the corresponding assessment(s) is provided in Chapter 3.

1.1 Purpose of the Document

This document defines and allocates the set of minimum requirements for the end-to-end operational, safety, performance, and interoperability aspects for implementations of the TSAA application. This SPR/INTEROP allocates these requirements to the necessary domains of the CNS/ATM system, (i.e., at the aircraft and ground domain levels).

These requirements can be used as a component for approval processes including aircraft type design approval, aircraft operator operational approval and Air Traffic Services (ATS) provider operational approval. This SPR/INTEROP document is also written to support system-specific standards (e.g., MOPS, TSOs) which may be used as design guidance by regulatory agencies and authorities.

In addition, this document provides guidance to determine the levels of design assurance and performance that are needed for each element (aircraft, operator and Air Navigation Service Provider [ANSP]) to support the TSAA application.

The TSAA SPR/INTEROP document is also envisioned to be used along with those from other surveillance applications based on Automatic Dependent Surveillance-Broadcast (ADS-B) to develop minimum standards for avionics systems to assure that all subsystems perform their intended functions adequately for these applications.

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